Var. *α*. tibiis tarsisque basi testaceis.

Var. *β*. thoraceque ferruginoso.

Var. *γ*. pedibus nigris.

Fallen, Act. Holm. 1813, p. 255. Hydrom. 5. Meig. Dipt. Eur. vi. 117. Macq. S. à B. ii. 537.—*Ephydra salinarum*. Bouché, Naturg. Ins. i. 99. tab. 6. fig. 13–14, larva and pupa.

Sp. 34. *micans*, E. obscure viridis pedibus nigris, alis fuscanis, arista nonnisi basi pubescente, facie alba aut flavicante.

Ent. Mag. i. 175.

This may be a mere variety of the last species; as such Fallen has considered it.

Subg. 11. Canace, *Curt. Guide, App.*

Caput depressum. Facies transversa, perpendicularis, subimpressa, lateribus ciliata; clypeus exertus; peristoma magnum. Oculi elliptici transversi. Arista pubescens. Abdomen conicum, 7-annulatum, segmento 2° maximo. Areolæ præbrachialis et analis parvæ completæ.

Sp. 35. *nasica* (Curt. App.), E. Can. cinerea fronte thoraceque ferruginosis, facie albida, tarsis basi ferrugineis. 1¼ lin.

England; communicated by F. Walker.

Authors cited or referred to.

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XLIV.—*Further Remarks on the Morphology of the Ascidia of Plants*. By M. Ch. Morren, Professor of Botany at Liège, Member of the Royal Academy of Brussels.

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of the blade of the leaf. The leaf coheres by its margins and above, absolutely as in the formation of carpels, which made me say that the ascidium is a tendency to the floral form. Since this period new facts have confirmed this theory. During my stay at Newcastle in Northumberland, at the Meeting of the British Association, I had an opportunity of studying the different preparations of monstrosities which the Rev. W. Hincks of York, known by his 'Monograph of the *Œnotheræ*,' had brought there. Amongst these specimens were two of the most remarkable accidental ascidia, and which permit us to classify these extraordinary deviations. One was on a specimen of *Tulipa gesneriana*. The leaf which, as is well known, sheaths the peduncle in this plant, had cohered at its free margins along its whole length, so that the outer surface of the pitcher thus formed was always the under surface of the leaf. But it resulted also from the complete cohesion of the margins of this organ that no aperture allowed of any communication between the outward air and that inclosed in its cavity. Nevertheless a flower and its peduncle were inclosed in this cavity, and the perianth was not less finely coloured through this envelope than are the petals of *Papaver rhoeas* under the thick tunics of their caducous calyx. As the flower developed, it was necessary that the peduncle should grow larger, which it did to a greater degree than the ascidimorphous leaf, which remained small; but then it was also necessary that the peduncle should twist itself or that the ascidium should burst. The peduncle prevailed, and the ascidium opened; but not, as would have been supposed, by a longitudinal rupture occasioned by a dislocation of the cohering margins, but by another very curious way of dehiscence. The ascidium formed an elongated bag, tumid in the middle, tapering at its two extremities, above and below: now this bag was split across with a horizontal rupture, just as in the ascidium the lid is detached from the pitcher, or rather as in mosses the calyptra falls off from the urn. The flower indeed carried this cap with it and could not rid itself of it, so that the perianth remained curled up beneath and within. At sight of this tulip, having at its base a conical foliaceous hollow body, from the centre of which arose a long peduncle, terminating in its turn in

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In *Nepenthes* and *Sarracenia* the ascidia also are at first shut up, and at Edinburgh, upon the beautiful plants of *Nepenthes,* cultivated with so much skill by Mr. MacNab, I was able to learn how their dehiscence takes place. The part which the circular struma acts, with its numerous small transverse ribs, then becomes very easy to understand. Before the operculum is detached its thin margins are folded round this struma, which holds them very strongly fixed, as a bladder is fastened over the opening of a vessel by the inflected margin.

When once the operculum is freed it cannot again fasten itself above the struma. This dehiscence of the lid is therefore horizontal or in a small degree oblique, like the direction of the struma itself, and it is nearly the same in all ascidia. On that of the tulip formed by monstrosity, the opening, although in this case it was an actual rupture caused by internal violence, took place notwithstanding in the same manner. This comparison deserves some attention, especially if further observations tend to confirm it.

The other accidental ascidium which I had the pleasure of seeing among the preparations of the Rev. Mr. Hincks, was of a kind altogether singular. It belonged to the *Polygonatum multiflorum*; but it had not shown itself, like that which I had myself gathered upon the same species of plant, at the upper part of the plant, but at the lower part of it. It was an encasing of three ascidia one in the other, through the centre of which passed the stalk, which when once free above them had become covered with its usual leaves and flowers in their normal form. Imagine therefore a foliaceous pitcher ending in two lateral and opposite auricles, serving as a case to two other pitchers which also have two opposite auricles, and above them a bunch of leaves and flowers, and we shall have a representation of this beautiful monstrosity, of this curious anomaly. Here again the outer surfaces of the ascidia were the under surfaces of the leaves, so that this condition never contradicts itself, and thus it acquires the value of a well-established law. It is always the carpellary state which is repeated, the floral

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structure which is shown, and thus the ascidium is always a dependence, a result of the retrograde metamorphosis. It appears to me that these are facts irrevocably added to the study and science of vegetable monstrosities.

But what rendered the ascidium of the *Polygonatum* of Mr. Hincks to me extremely curious, was to see it composed of two leaves instead of one. The two terminal auricles, which were in extent about a quarter of the total length of the ascidium, are in fact the tops of the two leaves, which by their cohesion had formed these ascidia; each of these auricles corresponded with a principal nerve. The leaves of the *Polygonatum,* instead of originating at different heights, are here almost perfectly opposite; they have then cohered two by two at their margins, which were primitively and normally free, so as to make a common cavity of their upper surfaces. This same fact is repeated in three successive pairs.

This binary origin of the ascidium is, I believe, unique in the known cases of monstrosity, and in spite of its apparent deviation it comes within the general law in the most complete manner: the lower surface of the leaf remains the outside; it is the blade which has formed the pitcher; and the latter is only owing to a cohesion of the margins. These three circumstances, which are in perfect accordance with what I have before established, are worthy of remark.

Hence it is evident that the following classification may be established amongst the *anomalous ascidia* hitherto observed:

The ascidia are either formed of one leaf only or of several;

The *monophyllous* are the first;

The *polyphyllous* the second.

A. The *monophyllous ascidia,* are, 1. either *sarraceniform* when they are formed by a leaf cohering at its margins to form a pitcher, so that the blade exceeds the aperture of the urn at its summit as the opercular blade does in *Sarracenia.* The ascidia of *Vinca rosea* and *Polygonatum* mentioned in my former paper belong to this class of ascidia.

2. Or *calyptrimorphous,* when they are formed by a leaf cohering at its margins, but the upper part of which is detached horizontally, as in the *Tulipa gesneriana* of Mr. Hincks. This form, instead of reminding us of the *Sarracenia,* ap-

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But what rendered the ascidium of the *Polygonatum* of Mr. Hincks to me extremely curious, was to see it composed of two leaves instead of one. The two terminal auricles, which were in extent about a quarter of the total length of the ascidium, are in fact the tops of the two leaves, which by their cohesion had formed these ascidia; each of these auricles corresponded with a principal nerve. The leaves of the *Polygonatum,* instead of originating at different heights, are here almost perfectly opposite; they have then cohered two by two at their margins, which were primitively and normally free, so as to make a common cavity of their upper surfaces. This same fact is repeated in three successive pairs.

This binary origin of the ascidium is, I believe, unique in the known cases of monstrosity, and in spite of its apparent deviation it comes within the general law in the most complete manner: the lower surface of the leaf remains the outside; it is the blade which has formed the pitcher; and the latter is only owing to a cohesion of the margins. These three circumstances, which are in perfect accordance with what I have before established, are worthy of remark.

Hence it is evident that the following classification may be established amongst the *anomalous ascidia* hitherto observed:

The ascidia are either formed of one leaf only or of several;

The *monophyllous* are the first;

The *polyphyllous* the second.

A. The *monophyllous ascidia,* are, 1. either *sarraceniform* when they are formed by a leaf cohering at its margins to form a pitcher, so that the blade exceeds the aperture of the urn at its summit as the opercular blade does in *Sarracenia.* The ascidia of *Vinca rosea* and *Polygonatum* mentioned in my former paper belong to this class of ascidia.

2. Or *calyptrimorphous,* when they are formed by a leaf cohering at its margins, but the upper part of which is detached horizontally, as in the *Tulipa gesneriana* of Mr. Hincks. This form, instead of reminding us of the *Sarracenia,* ap-

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2. Or *calyptrimorphous,* when they are formed by a leaf cohering at its margins, but the upper part of which is detached horizontally, as in the *Tulipa gesneriana* of Mr. Hincks. This form, instead of reminding us of the *Sarracenia,* ap-

proaches nearer to *Nepenthes*, where the dehiscence of the operculum and of the pitcher is also horizontal or very nearly so. Only here the operculum continues, whilst elsewhere it is removed.

B. The *polyphyllous ascidia* are formed of several leaves. Up to the present time diphyllous alone have been observed, but the study of the conditions in which they arise evidently proves that there is great probability of our finding triphyllous, tetraphyllous, pentaphyllous, and in short polyphyllous, especially in plants where the leaves are verticillate.

It is thus that a just appreciation of things anticipates ulterior discoveries, and it is the best proof that a *science of observation* is quite as exact as a *science of calculation.*

XLV.—*Descriptions of British* Chalcidites. By FRANCIS WALKER, F.L.S.

[Continued from p. 182.]

Sp. 59. Cirrospilus Rapo. *Viridis aut cyaneus, abdomen cupreum, antennæ nigræ aut piceæ, pedes picei, tarsi pallidiores, femora cyanea, alæ limpidæ.*

Mas. Viridi-cyaneus: oculi et ocelli rufi: antennæ nigræ; articuli 1^{us} et 2^{us} nigro-cyanei: abdomen nigro-cupreum: pedes picei; coxæ virides; genua fulva; tarsi flavi, apice fusci; propedum tibiæ fuscæ, tarsi fulvi: alæ limpidæ; squamulæ piceæ; proalis nervi fusci, metalis fulvi.

Fem. Cyaneus: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} cyanei: pedes coxis et femoribus nigro-cyaneis. (Corp. long. lin. $\frac{2}{3}$; alar. lin. 1.)

Var. β. *Fem.*—Meso- et metatarsi fusci, basi fulvi.

Var. γ. *Fem.*—Abdomen cyaneo-varium: pedes nigro-cyanei; trochanteres picei; genua flava; tibiæ piceæ; tarsi fusci; protibiæ fuscæ, basi supra fulvæ.

Var. δ. *Fem.*—Obscure viridis: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} virides: abdomen cyaneo-cupreum; trochanteres fulvi, tarsi fulvi, apice fusci; protarsi obscuriores.

Found near London.

Fem. Corpus sublineare, nitens, scitissime squameum, parce hirtum: caput transversum, breve, convexum, juxta thoraci latum: antennæ clavatæ, corporis dimidio breviores; articulus 1^{us} gracilis, sublinearis; 2^{us} longicyathiformis; 4^{us} 3^{o} brevior; 5^{us} adhuc brevior; clava fusiformis, acuminata, articulo 5^{o} duplo longior: thorax brevi-ovatus, convexus: prothorax brevissimus, supra vix conspicuus: mesothoracis scutum latitudine longius; parapsidum suturæ bene determinatæ; scutellum brevi-conicum: metathorax transversus, mediocris: petiolus brevissimus: abdomen longiovatum, tho-

proaches nearer to *Nepenthes*, where the dehiscence of the operculum and of the pitcher is also horizontal or very nearly so. Only here the operculum continues, whilst elsewhere it is removed.

B. The *polyphyllous ascidia* are formed of several leaves. Up to the present time diphyllous alone have been observed, but the study of the conditions in which they arise evidently proves that there is great probability of our finding triphyllous, tetraphyllous, pentaphyllous, and in short polyphyllous, especially in plants where the leaves are verticillate.

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[Continued from p. 182.]

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Mas. Viridi-cyaneus: oculi et ocelli rufi: antennæ nigræ; articuli 1^{us} et 2^{us} nigro-cyanei: abdomen nigro-cupreum: pedes picei; coxæ virides; genua fulva; tarsi flavi, apice fusci; propedum tibiæ fuscæ, tarsi fulvi: alæ limpidæ; squamulæ piceæ; proalis nervi fusci, metalis fulvi.

Fem. Cyaneus: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} cyanei: pedes coxis et femoribus nigro-cyaneis. (Corp. long. lin. $\frac{2}{3}$; alar. lin. 1.)

Var. β. Fem.—Meso- et metatarsi fusci, basi fulvi.

Var. γ. Fem.—Abdomen cyaneo-varium: pedes nigro-cyanei; trochanteres picei; genua flava; tibiæ piceæ; tarsi fusci; protibiæ fuscæ, basi supra fulvæ.

Var. δ. Fem.—Obscure viridis: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} virides: abdomen cyaneo-cupreum; trochanteres fulvi, tarsi fulvi, apice fusci; protarsi obscuriores.

Found near London.

Fem. Corpus sublineare, nitens, scitissime squameum, parce hirtum: caput transversum, breve, convexum, juxta thoraci latum: antennæ clavatæ, corporis dimidio breviores; articulus 1^{us} gracilis, sublinearis; 2^{us} longicyathiformis; 4^{us} 3^{o} brevior; 5^{us} adhuc brevior; clava fusiformis, acuminata, articulo 5^{o} duplo longior: thorax brevi-ovatus, convexus: prothorax brevissimus, supra vix conspicuus: mesothoracis scutum latitudine longius; parapsidum suturæ bene determinatæ; scutellum brevi-conicum: metathorax transversus, mediocris: petiolus brevissimus: abdomen longiovatum, tho-

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[Continued from p. 182.]

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Mas. Viridi-cyaneus: oculi et ocelli rufi: antennæ nigræ; articuli 1^{us} et 2^{us} nigro-cyanei: abdomen nigro-cupreum: pedes picei; coxæ virides; genua fulva; tarsi flavi, apice fusci; propedum tibiæ fuscæ, tarsi fulvi: alæ limpidæ; squamulæ piceæ; proalis nervi fusci, metalis fulvi.

Fem. Cyaneus: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} cyanei: pedes coxis et femoribus nigro-cyaneis. (Corp. long. lin. $\frac{2}{3}$; alar. lin. 1.)

Var. β. Fem.—Meso- et metatarsi fusci, basi fulvi.

Var. γ. Fem.—Abdomen cyaneo-varium: pedes nigro-cyanei; trochanteres picei; genua flava; tibiæ piceæ; tarsi fusci; protibiæ fuscæ, basi supra fulvæ.

Var. δ. Fem.—Obscure viridis: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} virides: abdomen cyaneo-cupreum; trochanteres fulvi, tarsi fulvi, apice fusci; protarsi obscuriores.

Found near London.

Fem. Corpus sublineare, nitens, scitissime squameum, parce hirtum: caput transversum, breve, convexum, juxta thoraci latum: antennæ clavatæ, corporis dimidio breviores; articulus 1^{us} gracilis, sublinearis; 2^{us} longicyathiformis; 4^{us} 3^{o} brevior; 5^{us} adhuc brevior; clava fusiformis, acuminata, articulo 5^{o} duplo longior: thorax brevi-ovatus, convexus: prothorax brevissimus, supra vix conspicuus: mesothoracis scutum latitudine longius; parapsidum suturæ bene determinatæ; scutellum brevi-conicum: metathorax transversus, mediocris: petiolus brevissimus: abdomen longiovatum, tho-

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Mas. Viridi-cyaneus: oculi et ocelli rufi: antennæ nigræ; articuli 1^{us} et 2^{us} nigro-cyanei: abdomen nigro-cupreum: pedes picei; coxæ virides; genua fulva; tarsi flavi, apice fusci; propedum tibiæ fuscæ, tarsi fulvi: alæ limpidæ; squamulæ piceæ; proalis nervi fusci, metalis fulvi.

Fem. Cyaneus: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} cyanei: pedes coxis et femoribus nigro-cyaneis. (Corp. long. lin. $\frac{2}{3}$; alar. lin. 1.)

Var. β. Fem.—Meso- et metatarsi fusci, basi fulvi.

Var. γ. Fem.—Abdomen cyaneo-varium: pedes nigro-cyanei; trochanteres picei; genua flava; tibiæ piceæ; tarsi fusci; protibiæ fuscæ, basi supra fulvæ.

Var. δ. Fem.—Obscure viridis: antennæ nigro-piceæ; articuli 1^{us} et 2^{us} virides: abdomen cyaneo-cupreum; trochanteres fulvi, tarsi fulvi, apice fusci; protarsi obscuriores.

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